epiTRENDS

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Primary Care Practitioners an Important Link in Identifying Potential Cases of Pesticide Exposure

From the wheat fields of the Palouse to the orchards of the Yakima Valley and the farmlands west of the Cascades, agriculture is a major industry in Washington. Farmworkers face health risks from pesticide exposure, but tracing the link between health symptoms and exposure can be difficult, and too often impossible.

Washington State is second only to California in the number of potential cases of pesticide poisoning from all sources investigated annually. Of 2246 cases investigated from 1995 to 1999, 45% were classified as related to pesticide exposure in the categories of definite, probable, or possible (DDP). This percentage might have been higher had not delayed reporting resulted in a cold investigative trail. Physicians alert to this health risk are an important element to strengthening the reporting and investigation process.

Investigating Cases

The Washington State Department of Health (DOH) has been investigating pesticide-related illnesses since 1970. Pesticide poisonings became a reportable condition in 1990, and DOH established the Pesticide Illness Monitoring System (PIMS) to investigate and track all suspected cases.

Of the DDP cases investigated by PIMS, a substantial proportion (44%) occurred among workers in agricultural settings, primarily men 18–50 years of age. The most common exposures resulting in reported

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State Study Shows Age and Socioeconomic Status Affect Access to Therapy for Colon and Rectal Cancers

Colorectal cancer claims the lives of nearly 1,000 Washington State residents each year. The recommended standard treatment is surgery followed by adjuvant chemotherapy and/or radiation for stage III colon cancer and stages II and III rectal cancer.

A recent study conducted by the Washington State Cancer Registry (WSCR) and the Office of Epidemiology, and published in *Cancer*, looked at the extent to which patient age or socioeconomic status affected access to the recommended adjuvant therapy for colon and rectal cancers. The study concluded that colon cancer patients who were 75 years or older, who were insured only with Medicare, or who lived in a ZIP code area that was in the lowest quartile of per capita income, were significantly less likely to receive the recommended adjuvant therapy compared to other patients. These associations remained after data analysis controlled for clinical factors that may influence follow-up treatment, such as co-morbidities and contraindications to chemotherapy. Among rectal cancer patients, those who were 65 years or older were significantly less likely to receive the recommended treatment than were younger patients. The study did not find unequal treatment between those living in rural compared to urban areas. An insufficient number of non-white colorecta1 cancer patients prevented assessment of adjuvant therapy by race.

Linking WSCR data to hospital discharge records allowed determination of the primary source of health insurance, co-morbidities, and contraindications to adjuvant therapy. Linking these data to the 1990 U.S. Census data allowed determination

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Pesticide Illness *(from page 1)*

illnesses were direct contact with pesticides during mixing, loading, or applying pesticides; exposure to pesticide drift; and exposure to pesticide residues in fruit trees, field crops, and greenhouses. The largest number of cases occurred among workers in the tree fruit industry. Organophosphate and carbamate insecticides were involved in 28% of illnesses among agricultural workers in 1999.

Information about potential pesticide-related illnesses comes from a variety of sources including the Department of Labor & Industries Workers' Compensation claims, Washington Poison Control (WPC), Department of Agriculture, health care providers, and victims or their friends and families. Forty-six percent of all suspected cases and 74% of suspected cases among farmworkers were reported to PIMS from Workers' Compensation claims in 2000. While each of the farmworkers had seen a health care provider, the providers reported fewer than 20% of these suspected cases.

PIMS investigators use national criteria to classify a case as related to pesticide exposure. For about a third of the cases investigated, they were not able to gather sufficient information to definitively determine whether the illness was related to such exposure. The timeline of a report to DOH-PIMS was important for a successful investigation. When more than five days had elapsed between the exposure and the notification to DOH, the proportion of cases with a definitive classification decreased from 86% to 54%. In these cases investigators were often unable to document evidence of exposure or pesticide residues. Even worse, contacting the person involved was sometimes impossible.

The Time Lag Problem

It often takes almost a month for Workers' Compensation claims to be filed by a physician, entered into a database, identified as a suspected pesticide illness, reviewed, and forwarded to DOH. This delay underscores why care providers should notify WPC or DOH promptly about any suspected case of pesticide poisoning.

DOH investigators also looked at the types of diagnoses associated with farmworker cases reported to PIMS. Of the DPP cases seen by a physician, only 16% received a pesticide-related diagnosis. About 25% of the cases had more than one type of diagnosis code. Ophthalmic conditions (22%) were the leading type of diagnosis followed by dermatologic conditions (17%), chemical exposures (11%), allergies (8%), asthma (5%), respiratory conditions (2%), and burns (2%). Cases with a diagnosis related to a skin, allergic, or asthmatic condition were the least likely to be classified as pesticide related. These types of conditions may be inherently more difficult to link firmly to pesticide exposures, but it is also possible that providers did not recognize these conditions to be the result of a pesticide exposure.

These findings underscore the need to continue efforts to educate health care providers about the recognition of pesticide-related injuries and the importance of timely reporting of suspected illnesses and injuries to DOH. The time lag for abstracting data from Workers' Compensation claims hampers efforts to investigate and understand the causes of pesticide illnesses. Prompt notification to DOH would improve our ability to understand the underlying causes of pesticide illness and help to improve the health of farmworkers.

For More Information

Providers can find more information about pesticide-related illness in *The Health of Washington State* (http://www.doh.wa.gov/HWS/doc/EH/EH_PP.doc) and in the annual reports to the Pesticide Incident Reporting & Tracking panel (http://www.doh.wa.gov/ehp/ts/pubs.htm#pirt).

Update on West Nile Virus

The Centers for Disease Control and Prevention (CDC) has confirmed West Nile virus infection in an organ donor who had received numerous transfusions of blood products before death and in all four of the organ recipients. As reported in the September 20 *MMWR*, three of the four organ recipients in this investigation developed encephalitis approximately 8–17 days following transplant surgery. Updates on this and other investigations are available at http://www.cdc.gov/mmwr/.

Although the situation remains under investigation, this cluster of illnesses should alert clinicians to the possibility of West Nile virus infection in organ transplant recipients and in patients receiving blood transfusions. This transmission route has not been previously reported and the risk for acquiring West Nile virus infection from donated organs or blood is not known.

The evidence to date indicates that virus was transmitted from donor to recipients through the transplanted organs. At present, data are insufficient to indicate any changes to existing organ or blood donor screening and testing practices. An FDA alert regarding West Nile virus and blood safety can be found at: http://www.fda.gov/cber/safety/westnile.htm

No human, horse, or bird cases of West Nile virus have been identified as having been acquired in Washington State. Travelers exposed in states with documented West Nile virus outbreaks have been diagnosed in Washington. The DOH web site posts information for clinicians at: http://www.doh.wa.gov/ehp/ts/Zoo/WNV/WNV.html

Monthly Surveillance Data by County

August 2002* – Washington State Department of Health

County	E. coli O157:H7	Salmonella	Shigella	Hepatitis A	Hepatitis B	Non-A, Non-B Hepatitis	Meningococcal Disease	Pertussis	Tuberculosis	Chlamydia	Gonorrhea	AIDS	Pesticides†	Lead§#
Adams	0	0	0	0	0	0	0	0	0	1	0	0	1	0/#
Asotin	0	0	0	0	0	0	0	0	0	3	0	0	0	0/0
Benton	1	1	1	1	0	0	0	0	0	7	0	0	1	0/18
Chelan	0	0	0	0	0	0	0	0	0	5	0	0	1	1/41
Clallam	1	1	0	0	0	0	0	0	0	12	0	0	0	0/#
Clark	5	1	2	2	0	0	1	3	0	82	12	0	3	0/0
Columbia	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Cowlitz	0	0	0	0	1	0	0	3	0	6	0	0	0	0/35
Douglas	0	0	0	0	0	0	0	0	0	2	0	0	0	0/0
Ferry	0	0	0	0	0	0	0	0	0	0	0	1	0	0/0
Franklin	0	1	0	0	0	0	0	0	0	10	1	0	0	1/22
Garfield	0	0	0	0	0	0	0	0	0	0	0	0	1	0/0
Grant	0	1	0	0	0	0	0	0	0	13	0	1	1	4/163
Grays Harbor	0	1	0	1	0	0	0	0	0	7	0	0	0	0/#
Island	0	0	0	0	0	0	0	0	0	25	0	1	0	0/#
Jefferson	1	0	0	0	0	0	0	0	0	1	0	0	0	0/#
King	9	18	3	1	3	0	1	11	12	335	100	5	6	1/79
Kitsap	0	0	0	1	0	0	0	2	1	17	8	1	0	0/8
Kittitas	1	0	0	0	0	0	1	0	0	3	0	0	0	0/0
Klickitat	0	0	0	0	0	0	0	0	0	3	0	0	0	0/0
Lewis	2	0	0	0	0	0	0	0	0	9	1	0	1	0/#
Lincoln	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Mason	0	0	0	0	0	0	0	0	0	6	1	0	0	0/0
Okanogan	1	0	0	0	0	0	0	0	0	2	0	1	1	1/8
Pacific	0	0	1	0	0	0	0	0	0	3	0	0	0	0/0
Pend Oreille	1	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Pierce	0	3	11	2	1	0	1	0	0	159	37	5	4	0/22
San Juan	0	0	0	0	0	0	0	0	0	2	0	0	0	0/0
Skagit	0	0	0	1	0	0	0	15	2	18	0	0	0	5/92
Skamania	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Snohomish	2	7	0	1	1	0	0	4	0	92	15	4	1	0/12
Spokane	26	1	1	0	5	1	0	0	0	67	13	0	2	0/18
Stevens	0	0	0	0	0	0	0	0	0	2	0	0	0	0/0
Thurston	1	0	1	0	0	0	1	0	0	69	12	0	0	0/#
Wahkiakum	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Walla Walla	2	2	0	0	0	0	0	0	0	14	0	0	0	0/54
Whatcom	10	10	0	0	2	0	0	1	0	31	6	0	0	3/67
Whitman	1	0	0	0	0	0	0	0	0	0	0	0	0	0/#
Yakima	3	4	6	1	0	0	1	5	0	73	6	1	6	5/76
Unknown														0/0
Current Month	67	51	26	11	13	1	6	44	15	1079	212	21	29	23/731
September 2001	21	80	36	25	13	0	6	20	27	1416	342	39	30	12/396
2002 to date	98	320	101	121	51	16	50	336	155	9670	1889	313	197	125/5221
2001 to date	59	336	138	92	89	16	52-	102	167	9110	2020`	363	159	92/3107

* Data are provisional based on reports received as of August 31, unless otherwise noted.
† Unconfirmed reports of illness associated with pesticide exposure.
§# Number of elevated tests (data include unconfirmed reports) / total tests performed (not number of children tested); number of tests per county indicates county of health care provider, not county of residence for children tested; # means fewer than 5 tests performed, number omitted for confidentiality reasons.

Washington Residents Show Gains in Health Status

WWW Access Tips

The Health of Washington State is available on the Department of Health's web site at http://www.doh.wa.gov/HWS/default.htm.

*epi*TRENDS online

http://www.doh.wa.gov/Publicat/EpiTrends/01-02_EpiTrends/2002_trend.htm

Washington residents in general are healthier than people who live in other states and they are healthier than they were in 1990. They drink less alcohol and have lower rates of many infectious diseases. Rates for teen pregnancy and infant mortality also have dropped. However, there is still room for improvement. Obesity doubled during the 1990s, indoor air quality concerns have been growing, and on our health care system faces significant stresses.

The most recent statewide health assessment presents these results. *The Health of Washington State* addresses three general questions: How healthy is Washington State as a place to live? How healthy are we as a community of people sharing that place? And, are some of us better off than others?

More than 60 chapters cover issues related to health status, health-related risk factors, environmental health, and health care services. Most chapters include Washington State data showing trends over time; how Washington compares to the United States; geographic variation within the state; and differences among Washingtonians in different income, educational, racial, or ethnic groups. The goal of assessment is a public health action, and each chapter provides information about effective interventions to improve health status, reduce unhealthy behaviors or environments and increase healthy ones, or to ensure high-quality health care services and the means for people to use these services.

The Health of Washington State is posted on the Department of Health's Web site (see WWW Access Tips). CD-ROMs are available from Ramona Nelson at 360-236-4230 or ramona.nelson@doh.wa.gov.

Colorectal Cancer *(from page 1)*

of per capita income and urban or rural residence. While some researchers and clinicians have questioned the accuracy of the treatment field in WSCR, others have indicated that the findings reflect clinical practice. They believe that concerns about follow-through might influence whether practitioners recommend adjuvant therapy to patients with fewer resources.

For a reprint of the journal article, contact Mary Ann Shann-Fetty at 360-236-4246 or maryann.shannfetty@doh.wa.gov.\

Calendar

October 7–9
Wenatchee

9th Annual Joint Conference on Health — *Public Health Priorities: Balancing our Core Mission with Emergency Preparedness.* Sponsored by the Washington State Public Health Association in cooperation with the Washington State Department of Health and the Chelan-Douglas County Health District. For more information: http://www.wspha.org/JCH2.html

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